

**IMPACT OF SOCIAL MEDIA ADDICTION ON  
PHYSICAL ACTIVITY AMONG UNDERGRADUATE  
STUDENTS**

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**2022**

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ACTIVITY AMONG UNDERGRADUATE STUDENTS**

By

**MAK KAI NAN**

A Research project submitted to the Department of Physiotherapy,  
M. Kandiah Faculty of Medicine and Health Sciences,  
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in partial fulfilment of the requirements for the degree of  
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# IMPACT OF SOCIAL MEDIA ADDICTION ON PHYSICAL ACTIVITY AMONG UNDERGRADUATE STUDENTS

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## Abstract

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**Background and Objective:** The study aims to find the impact of social media addiction on physical activity level among undergraduate students in UTAR. Through the evolution of Internet technologies, there is a surge in excessive use of social media. An individual who misuses social media may lead to social media addiction, hence negatively affected health physically and mentally. The objective of this study was: to find out the impact of social media addiction on physical activity level among undergraduate students in UTAR.

**Methods:** A total of 378 undergraduate students from different faculty or department of UTAR Sungai Long and Kampar campus were involved in this cross-sectional study. The online questionnaire was randomly disseminated to students from all faculties through social media. Participants were also recruited around the campus by providing the QR code to be scanned.

**Results:** There is no significant associations between social media addiction and physical activity level. More than half of the subjects were observed to be suffering from social media addiction (n = 353, 93.4%). Majority of the participants reported moderate physical activity levels (n = 161, 42.6%).

**Conclusions:** No significant associations between social media addiction and physical activity level. A significant number of subjects reported to have social media addiction. Awareness campaign or education through multimedia information should be encouraged in the institution as well as the community in order to improve the alertness of individual regarding social media addiction.

**Keywords:** Physical activity, social media addiction, social media use, undergraduate students

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## APPROVAL SHEET

This Research project entitled “**IMPACT OF SOCIAL MEDIA ADDICTION ON PHYSICAL ACTIVITY AMONG UNDERGRADUATE STUDENTS**” was prepared by MAK KAI NAN and submitted as partial fulfilment of the requirements for the degree of Bachelor of Physiotherapy (Honours) at Universiti Tunku Abdul Rahman.

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**M. KANDIAH FACULTY OF MEDICINE AND HEALTH SCIENCES  
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Date: 23/12/2022

**PERMISSION SHEET**

It is hereby certified that **MAK KAI NAN** (ID No: **20UMB05836**) has completed this Research project entitled “**IMPACT OF SOCIAL MEDIA ADDICTION ON PHYSICAL ACTIVITY AMONG UNDERGRADUATE STUDENTS**” under the supervision of Mr. Martin Ebenezer Chellappan (Supervisor) from the Department of Physiotherapy, M. Kandiah Faculty of Medicine and Health Sciences.

Yours truly,

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(MAK KAI NAN)



## **DECLARATION**

I hereby declare that the Research project is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

Name: MAK KAI NAN

Date: 23/12/2022

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## **LIST OF ABBREVIATION**

BSMAS	Bergen Social Media Addiction Scale
COVID-19	Coronavirus disease 2019
FAM	Faculty of Accountancy and Management
FAS	Faculty of Arts and Social Science
FBF	Faculty of Business and Finance
FCI	Faculty of Creative Industries
FEGT	Faculty of Engineering and Green Technology
FICT	Faculty of Information and Communication Technology
FSc	Faculty of Science
ICS	Institute of Chinese Studies
IPAQ	International Physical Activity Questionnaire
LKC FES	Lee Kong Chian Faculty of Engineering and Science
MK FMHS	M. Kandiah Faculty of Medicine and Health Sciences
PA	Physical Activity
SMA	Social Media Addiction
SD	Standard Deviation
UTAR	Universiti Tunku Abdul Rahman
WHO	World Health Organization

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Study

With the current advancements in Internet technologies nowadays, social media has become part of our daily life regardless of ages, especially during the COVID-19 pandemic that happened recently in these three years as it helps to connect peoples all around the world without travelling. Through the evolution of Internet technologies, our life has improved compared to back then as it eases our daily tasks as well as reduce our workloads. Accordingly, more social media platforms have been invented in the community, for instance Facebook, Instagram, TikTok, Little Red Book, Bilibili, Sina Weibo, Clubhouse, Netflix, and YouTube. Social media has become an essential use of everyone in their daily life, especially among younger generations, where it can be used anytime and anywhere through smartphones or laptops. Through the use of Internet, people able to access the desired information in a faster and easier way besides playing online games, watching movies and online shopping.

Dixon (2022) found that the market leader Facebook was the most famous social media platform in the world, moreover the first social network with over one billion registered accounts. In addition, the four largest social



media platforms in the market, namely Facebook, Instagram, WhatsApp and Facebook Messenger own more than one billion monthly active users (Dixon, 2022). Dixon (2022) also noted that there was more than 4.26 billion of users were using social media throughout the world in 2021 and expected to increase to nearly six billion by 2027. On average, internet users accessed social media for approximately 144 minutes per day since 2015 (Dixon, 2022). In 2019, Dixon (2022) found that the internet users from Latin America region spend the longest time on social media per day, on average 3 hours and 32 minutes.

Social media may bring many benefits or advantages to a person when it is used wisely, in a proper way and appropriate duration. Shimoga, Erlyana & Rebello (2019) observed the Goldilocks effect associated with frequency of social media use and health status that recommends moderate amount of social media use is advantageous to health. However, an individual who misuse social media may lead to social media addiction, hence causing a lot of disadvantages and negatively affected him or her health physically and mentally. Social media may generate negative emotional responses in a person like sense of depression and isolation when it is constantly used. This is because of the stress of showing off and sharing things with the followers on own social media account and comparison of material things and standards of living (Cheik, 2022). Hilliard (2021) concluded social media addiction is classified as a type of behavioural addiction. People tend to be over prioritised of their social media life which induced by their irresistible urge to log on their social media. Therefore, resulting the time spent on social media has unintentionally caused them to miss out important life events in their life such as family or friend gatherings (Hilliard,

2021). This could be caused by insufficient attention acquired in real life. Hence these individuals treat social media as a platform to alleviate their pressure, loneliness, or gloominess (Hilliard, 2021).

In the wake of the pandemic, the social media offered series of alternatives that highly assured better containment measures of the virus all around the world. Online trading, business, shopping, educational activities, entertainment and synod were all performed remotely. The growth of social media usage has rendered as a chance for businesses to work in direct marketing known as social media marketing. It is a form of digital marketing that make use of strength of prevalent social media networks to attain the marketing and branding targets (Kenan, 2022). Social media platforms for instance Facebook, Bilibili and Xiaohongshu served as a virtual space not only for social networking, but also digitally advertising and promoting one's brand, products or service. The social media influencers often put a lot of time on designing and planning how to manage or create contents for their social media profiles. Additionally, they have to response to the comments, shares and likes and interact with their followers and customers for the purpose of maintaining a good reputation. The Influencer Marketing State of the Union report from Hashoff mentioned that 56% of the content creators surveyed spend at least four hours every day on social media whereas more than 20% of them spend seven to eight hours or more (Cradduck, 2017). Hence, they are at high risk of developing social media addiction as it can negatively affects a person's mood and self-esteem when the goals set by the clients are not achieved (Azlan, 2022).

Kuss and Griffiths (2011) stated that social media addiction is a behavioural addiction that includes 6 components namely salience, mood modification, tolerance, withdrawal, conflict, and relapse. Griffiths et al. (2014) found that any behaviour that satisfy the aforesaid six components can be identified as an addiction. Salience happens when social media affects one's life by dominating on his or her thoughts, feelings and behaviours (Salas-Blas et al., 2022). Mood modification is the involvement in social media for escapism to improve one's mood (Salas-Blas et al., 2022). Tolerance is the increased usage of social media over time to acquire joy and satisfaction (Salas-Blas et al., 2022). Withdrawal symptoms are the unpleasant physical and psychological feeling when a person is prohibited from using social media (Cheng et al., 2022). Conflicts is the adverse effect on one's academics, work or relationship due to excessive social media use (Cheng et al., 2022). Relapse refers to the failure in controlling the problematic use of social media and repeatedly return to previous habits after times of abstinence (Salas-Blas et al., 2022).

According to World Health Organization (2020), physical activity defined as any movement of the body generated by contraction of skeletal muscles that requires energy expenditure. Physical activity comprises all types of activities and exercises which involve bodily movement apart from sedentary behaviour (Lowe, n.d.). Example of physical activities are working, household and outdoor chores, walking, shopping, swimming, intentional exercises, sports, and recreational activities (Lowe, n.d.). Based on the guideline on physical activity recommended by World Health Organization (WHO), all adults should at least engage 150 to 300 minutes of moderate aerobic activity per week (Bull et al.,

2020). Meanwhile, children and adolescents should engage in physical activity at an average of 60 minutes of moderate aerobic activity per day in order to improve their health (Bull et al., 2020). Performing physical activity regularly may reduce the risk of getting coronary heart disease, high blood tension, cerebrovascular accident, type 2 diabetes, rheumatoid arthritis, obesity, and several cancers such as colon cancer, breast cancer and endometrial cancer (Booth et al., 2012). Stanton et al. (2020) proved that there was a powerful positive association between PA and lower psychological distress. Therefore, engaging in physical activity is very important and indispensable for every individual so as to enhance physical strength, mental health, quality of life and well-being. Simultaneously, to prevent muscle wasting and muscle weakness secondary to prolonged sedentary behaviours.

This study has important contributions towards better management of the welfare of UTAR undergraduate students by better understanding the prevalence of social media addiction especially in this era where human and Internet have developed an inseparable relationship. The results of this research obtained can be used as a reference for the physiotherapists to further investigate education and programme tailored according to the current existing social media addiction condition in order to improve the physical activity level of the populations. Besides that, it was interesting to find out if the UTAR undergraduate students have been maintaining their physical activity while they have to manage both academics and social media. Accordingly, this study aimed to evaluate the impact of social media addiction on physical activity among undergraduate

students in UTAR and to assess whether it upholds the Goldilocks effect as observed in the previous studies.

## **1.2 Research Objective**

To determine the impact of social media addiction on physical activity among undergraduate students in UTAR.

## **1.3 Research Question**

What is the impact of social media addiction on physical activity among undergraduate students in UTAR?

## **1.4 Hypotheses**

**Null hypothesis ( $H_0$ ):** There is no significant impact of social media addiction on physical activity among undergraduate students in UTAR.

**Alternative hypothesis ( $H_A$ ):** There is a significant impact of social media addiction on physical activity among undergraduate students in UTAR.

## **1.5 Operational Definition**

1. **Impact:** The force of impression or a major influence or effect of one matter on another.

2. **Social media addiction:** A type of behavioural addiction where people tend to be over prioritised of their social media life which induced by their irresistible urge to log on their social media, thus resulting the time spent on social media has unintentionally caused them to miss out important life events in their life such as family gatherings.
  
3. **Physical activity:** Any movement of the body generated by contraction of skeletal muscles that requires energy expenditure. Physical activity comprises all types of activities and exercises which involve bodily movement such as sports and household chores, apart from sedentary behaviour.
  
4. **Undergraduate student:** A student who is progressing towards a bachelor's degree at the first level of higher education at a college or university.

## **1.6 Rationale of Study**

A few of studies have looked at the association of social media use with physical activity in students, however the studies are all conducted in other countries and no study has been tested among students in Malaysia. Therefore, this study is carried out to evaluate the impact of social media addiction on physical activity among undergraduate students in UTAR and to determine whether the results will be the same as found in other countries. The results of this research will also help physiotherapists to further investigate education and

programme design specific to the social media addiction condition for improving physical activity level of populations. When the specially designed programmes are formulated by physiotherapists for this condition, physical activity level of the population will also be improved naturally.

### **1.7 Scope of Study**

This study focused on undergraduate students who are currently pursuing full-time bachelor honours degree programmes from Year 1 to Year 5 in Sungai Long and Kampar Campus of Universiti Tunku Abdul Rahman to study the impact of social media addiction on physical activity. The target population in this study should aged between 18 to 28. This study will be conducted by distributing online questionnaires to students and collecting cross-sectional data on their social media addiction level and physical level.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Advantages of using social media**

Many studies have highlighted the advantages of using social media, for instance it provides a platform for information gathering and exchange. Wang et al. (2020) found out that 50.52% of participants chose social media as their main source of information for COVID-19, which ranks higher than medical website and their medical providers at 9.10% and 15.51% respectively. In another study, Rodriguez et al. (2020) stated that television was the most commonly used sources of information at 40.7%, secondly by social media at 24.6% and written media at 20.1%. Kim et al. (2014) noted that electronic sources like social media was the preferred sources of information among students for both academic and everyday-life information-seeking contexts as it is convenient and user-friendly as humans. Additionally, social networks are frequently used by public health officials to keep updated on official message announced by government authorities and to monitor the authenticity of message announced by official accounts (Tran et al., 2020).

In this day and age of social isolation, social media act as a significant role in maintaining relationship of human regardless of location and time. Ni et al. (2020) stated that social media provides telemedicine and online



psychological counselling, thus mental health issue such as anxiety, and depression can be reduced when an individual use social media platform appropriately to seek for assistance. For example, Ni et al. implemented a study to determine the anxiety and depression level in healthcare workers and the masses when they have more social support networks. At the end of the study, the researchers found that the anxiety and depression level are lesser in the participants when they have more social support networks. According to Wang et al. (2020), there was approximately 14.28% of participants stated that mobile apps such as social media were used to relieve their increased stress levels and for entertainment purposes during COVID-19 pandemic.

Social media was reported to be one of the most effective methods to educate students and affect their grades (Akcaoglu & David, 2016; Kaya & Bicen, 2016; Lee & Horsley, 2017). According to Delcore & Neufeld (2017), social media is increasingly used for educational purposes in recent years. Some studies also clearly shown that social media is commonly used by students (Ellison, Steinfield & Campe, 2007; Junco & Cole-Avent, 2008; Kaplan & Haenlein, 2010). Furthermore, social media act as an engagement tool to enhance students' engagement and learning experience especially for students who find it difficult to participate activities in class (Ganesan & Raja, 2018). For example, Google Apps for Education allow students to easily obtain valuable learning resources without being limited by time and location. Sidekli et al. (2013) conducted a research to find out the impact of teaching on Facebook on fourth grade students who are learning Social Studies. The researchers have found significant difference between treatment group with tuition assistance on

Facebook and control group. In short, evidence shown that teaching through Facebook has effectively improve students' academic performance.

## **2.2 Prevalence of social media addiction**

In a study of Leung (2007), teenagers seem to be a population at risk for developing social media addiction as a result of inconstancy in growing their cognitive control and boundary setting technical ability (Casey et al. 2005; Liu & Potenza, 2007). The prevalence of social media addiction in teenagers change widely across countries. In a finding of Kuss et al. (2013), he had concluded the prevalence rate of social media addiction among teenagers in several countries. 1.6% of Finnish and 1.5% of Greek teenagers were identified as social media addiction by using the Young's Internet Addiction Test (1999) (Kuss et al., 2013). By using the Minnesota Impulsive Disorders Inventory, it has been reported that 4% of United State high school students were found to be addicted in using social media (Kuss et al., 2013). Furthermore, study shown that in South East Asian countries such as Singapore, Taiwan, South Korea and China has higher prevalence rates of social media addiction (Kuss et al., 2013). For example, by using the Young's Internet Addiction Test (1998a), 10.7% of teenagers in South Korea and 8% of teenagers in China were determined to be addicted in using social media (Park et al., 2008; Cao et al., 2011).

However, all the studies which mentioned above were investigating the prevalence rate of social media addiction among adolescents. Hence, the results were not able to be generalized to the entire population such as children and senior adults in those countries. Moreover, there is no research about prevalence

rate of social media addiction tested in population of adolescents in Malaysia. Therefore, study regarding this topic is necessary to be conducted to find out whether the results will be the same as found in other countries. In addition, to determine the factors and effects of social media addiction on human physical and mental health.

In a study of Ching et al. (2017), it has been recorded that the prevalence of Internet addiction among medical students in Malaysia was very high. The findings indicated that one out of three students were susceptible to this addiction, by using the Internet Addiction Questionnaires (IAT). However, this research was only focused on the medical students from Year 1 to Year 5 in Malaysia instead of including students from other faculties or departments. Hence, the results cannot be generalized to the population of university students in Malaysia and a research regarding this topic with target population of university students in Malaysia should be conducted.

### **2.3 Adverse effect of social media addiction**

Many literatures regarding social media use and mental health have indicated that prolonged use of social media resulting in social media addiction is specifically responsible for adverse psychological effects and adversely associated with long term well-being (Eraslan-Capan, 2015; Hong, Huang, Lin & Chiu, 2014; Malik & Khan, 2015; Marino et al., 2017; Pantic, 2014; Shakya & Christakis, 2017; Toker & Baturay, 2016). The adverse psychological effects include mental health issue like stress, anxiety and depression. This point is supported by Lin et al. (2016) who noted that there was a significant positive

correlation between the time spent on social media and depressive symptoms among young adults in United States. This is in line with Pantic et al. (2012) who also stated that depressive symptoms are positively associated by the time spent on social media among high school students in Central Serbia. To verify the consistency of these findings from previous studies mentioned, a study was carried out by Hou et al. (2019) to investigate the relation between social media addiction and individuals' mental health. The findings confirmed that there was a significant negative association between social media addiction and mental health.

There were a few studies stated that prolonged use of social media may leads to academic fluctuation and decreased academic performance in students (Al-Menayes, 2014, 2015; Junco, 2012; Karpinski et al., 2013, Kirschner & Karpinski, 2010). For instance, Junco (2012) executed a study in the United States with a large sample size of total 1893 participants noted that the students' Grade Point Average (GPAs) was negatively correlated with the time spent on Facebook. Not only that, an individual's real time learning performance was also negatively affected by social media multitasking through texting, email, MSN and Facebook (Wood et al., 2012). Hou et al. (2019) conducted a survey to confirm the hypothesis with previous studies that social media addiction was negatively associated with academic performance. The results suggested that there was a negative association between social media addiction and academic performance, even though the association was weak.

Excessive use of social media can cause health related issues such as musculoskeletal pain, eye burning, blurry vision due to eye strain, sleep disturbance and carpal tunnel syndrome in result of repetitive hands and arms movements (Stevens, 2021). Besides that, Borzekowski (2019) found that problematic use of smartphone and other digital devices may lead to physical issues like a more sedentary lifestyle, which is positively related to childhood obesity. Furthermore, non-ergonomic postures assumed during smartphone or laptop use can result in cervical rigidity and musculoskeletal pain such as neck, shoulder, wrist, and finger pain, thus causing neck strain or “Tech Neck”. Repetitive thumb movements due to excessive texting, video gaming and web browsing using a cell phone may lead to “texting thumb”, formally known as De Quervain tenosynovitis, which is a painful condition affecting the thumb and wrist (Bozzola et al., 2019; Solecki, 2020).

#### **2.4 Association of social media addiction on physical activity**

Many studies proved that there was a correlation between social media and physical activity (Borzekowski, 2019; Bozzola et al., 2019; Buda et al., 2021; Solecki, 2020; Kemp, Parrish & Cliff, 2020). For example, the results of a study by Grimaldi-Puyana et al. (2020) showed that there was a relationship between social media use and physical activity, sedentary behaviour, mood, and sleep patterns. Subjects who spend more time using their social media were identified to have lower levels of physical activity compared to subjects who spend lesser time using social media (Grimaldi-Puyana et al., 2020). Moreover, Buda et al. (2021) found that prolonged social media usage is associated with low levels of vigorous physical activity, especially in girls.

On the contrary, in a study by Dang et al. (2018), argued that there were 23.1% of the participants found to be physically inactive where the level of physical activity is low to moderate. However, there was no relationship between social media addiction and physical activity among Vietnamese youths and adolescents (Dang et al., 2018). The low levels of physical activity in the population of Vietnamese youths and adolescents were due to other factors instead of social media addiction.

Moreover, in the study of Hürer et al., (2021), even though there was a significant proportion of the students who have social media addiction risk, however, the results displayed there was no significant association of social media addiction levels with physical activity levels. One of the primary reasons for these results could be due to the participants were studying in the Department of Physiotherapy and Rehabilitation where they might have the knowledge and awareness concerning to the importance of performing physical activity regularly (Hürer et al., 2021). Besides that, the physiotherapist students who involved in this study can use the physical activity strategies or strengthening exercises that learned during their lecture classes whenever they felt hectic or exhausted after prolonged use of social media (Hürer et al., 2021). For example, trapezius stretch and levator scapulae stretch used to relieve muscle spasm, doorway stretch used to relax tight pectoralis major muscle.

Although the results shown that there was a lack of relationship between social media addiction and physical activity levels in both studies by Hürer et al., (2021) and Dang et al. (2018), yet these results can only be generalized to the

population of physiotherapist students in Turkey and Vietnamese youths and adolescents. To overcome this gap, a study about association of social media addiction with physical activity levels should be examined and supported with different student groups such as students who are studying courses other than medicine and health care field. Not only that, further study with a larger sample size is recommended to be executed to increase the accuracy of the results (Zamboni, 2018).

Accordingly, this study is carried out to evaluate the impact of social media addiction on physical activity among undergraduate students in UTAR Malaysia and to determine whether the results will be the same as found in other countries.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Study Design**

This study is a cross-sectional study design. This research does not require any funding or sponsor from any institute or organization. The data collection weeks began after the approval of proposal by SERC and carried out for about four weeks. The whole research project took about twelve weeks since the preparation of research proposal and presentation until the end of thesis submission.

#### **3.2 Setting**

Online questionnaires using Google form.

#### **3.3 Population**

Students who pursuing any full-time bachelor honours degree programmes from Year 1 to Year 5 at UTAR Kampar and Sungai Long Campus.

#### **3.4 Sampling Size**

The population size of undergraduate students in UTAR is 15098 students. The total sample size required after calculation shows minimum of



375 participants. Sampling size was calculated by using the formula in Krejcie & Morgan (1970)'s article:

$$n = \frac{x^2 NP(1 - P)}{e^2(N - 1) + X^2 P(1 - P)}$$

$n$  = required sample size

$x^2$  = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841)

$N$  = population size

$P$  = population proportion (assumed to be 0.50 as this would provide the maximum sample size)

$e^2$  = degree of accuracy expressed as a proportion (0.05)

### **3.5 Sampling Method**

Convenience sampling is used in this study mainly for convenient purpose.

### **3.6 Selection Criteria**

#### **3.6.1 Inclusion Criteria**

1. Full time undergraduate students enrolled in a bachelor honours degree programme in UTAR Kampar and Sungai Long Campus
2. 18 to 28 years old individuals
3. Individuals who able to read and understand English

4. Individuals who agree to participate in the study

### **3.6.2 Exclusion Criteria**

1. Individuals who don't have social media account
2. Individuals with cognitive disabilities
3. Individuals with physical disabilities (Grimaldi-Puyana et al., 2020)
4. Individuals with medical disease such as stroke which limits physical activity in past 3 years (Grimaldi-Puyana et al., 2020)
5. Individuals who used any type of medication that could induce changes in the study variables (Grimaldi-Puyana et al., 2020)

## **3.7 Instrument**

### **3.7.1 Socio-demographics**

Socio-demographic data such as name, email address, age, gender (male/ female), ethnicity (Malay, Chinese, Indian and others), height, weight, faculty (MK FMHS, LKC FES, FAM, FCI, FEGT, FICT, FSc, FBF, FAS, ICS) and course of study were collected.

### **3.7.2 Social Media Addiction Levels**

To assess the at-risk social media addiction of participants on the Internet and experience of using social media over the past 7 days, a self-

report questionnaire known as Bergen Social Media Addiction Scale (BSMAS) was used in my study. All six questions from the scale were adapted into my questionnaire:

- i. “You spend a lot of time thinking about social media or planning how to use it.”
- ii. “You feel an urge to use social media more and more.”
- iii. “You use social media in order to forget about personal problems.”
- iv. “You have tried to cut down on the use of social media without success.”
- v. “You become restless or troubled if you are prohibited from using social media.”
- vi. “You use social media so much that it has had a negative impact on your job/ studies.”

It comprises of six items and each item in the scale fulfil six basic addiction norms, known as salience, mood modification, tolerance, withdrawal, conflict, and relapse (Hürer et al., 2021). These questions were asked using a five-point ordinal scale with anchors at all points: “Very often”, “Often”, “Sometimes”, “Rarely” and “Very rarely” with a score assigned to each option. The score for the options is as follows: “Very often (5)”, “Often (4)”, “Sometimes (3)”, “Rarely (2)” and “Very rarely (1)”. The raw score is tallied by adding up the figures of the six answers, thus generating a total score ranging from 6 to 30. The higher the scores, the higher the risk of addiction to social media. An individual

is considered at risk of developing problematic social media use when a BSMAS score is more than 19 (Bányai et al., 2017).

The questionnaire has validated in different settings irrespective of underlying conditions such as in Norway, Italy, Persia, Hungary, China and United State of America (Andreassen et al., 2016; Bányai et al., 2017; Chen et al., 2020; Lin et al., 2017; Monacis et al., 2017; Watson et al., 2020). Luo et al. (2021) proposed a score of 24 as a clinical cut-off point according to the gold standard of clinical diagnosis. BSMAS exhibited good internal consistency reliability with a Cronbach's  $\alpha$  of 0.84 (Stănculescu, 2022). The process of asking for permission from the author is eliminated as the questionnaire is shared public at the official website of BSMAS.

### **3.7.3 Physical Activity Levels**

A self-report questionnaire known as International Physical Activity Questionnaire - Short Form (IPAQ-SF) was used in my study to evaluate the physical activity levels of respondents within the past week. This questionnaire includes total of seven items. The scale evaluates for: (i) how many days and time were spent on vigorous physical activity, (ii) how many days and time were spent on moderate physical activities, (iii) how many days and time were spent on walking, (iv) how much time were spent on sitting on a weekday. Vigorous physical activities refer to

activities that requires a lot of physical effort and make you breathe much harder than normal. Moderate activities refer to activities that require moderate physical effort and make you breathe somewhat harder than normal.

Responses were reported in hours and minutes. IPAQ scoring protocol (2020) stated that the maximum time spend for each walking, moderate and vigorous intensity activity should be three hours per day. Any responses that exceed three hours should be truncated and recoded to a maximum of three hours. Time spent on sitting for more than sixteen hours should also be recoded to a maximum of sixteen hours, assuming an individual sleeps at least eight hours a day. In accordance to IPAQ scoring protocol (2020), the amount of time spent on sitting is not counted into the physical activity levels, yet it is treated as an additional indicator to sedentary behaviour.

The formulae as shown below is used to obtain the MET-min value for each domain (IPAQ scoring protocol, 2020).

<b>Activity</b>	<b>Formulae</b>
Walking	3.3 METs x amount of time spent (minutes) x number of days per week spent
Moderate PA	4 METs x amount of time spent (minutes) x number of days per week spent

Vigorous PA	8 METs x amount of time spent (minutes) x number of days per week spent
Total MET-min per week	Walking (MET-min/week) + moderate PA (MET-min/week) + vigorous PA (MET-min/week)

**Table 3.7.3:** IPAQ scoring calculation

The score was sorted into 3 categories, low, moderate and high level of physical activity according to the criteria given by IPAQ scoring protocol (2020). The level of physical activity is considered as high when an individual performed vigorous intensity activity on at least 3 days per week achieving a minimum of 1500 MET minutes per week; or performed 7 or more days of any combination of walking, moderate intensity or vigorous intensity activities achieving a minimum total physical activity of at least 3000 MET minutes per week. Next, individuals who scored moderate level of physical activity on the IPAQ means that they performed vigorous intensity activity and/or walking for at least 30 minutes per day for 3 or more days; or they performed moderate intensity activity and/or walking of at least 30 minutes per day for 5 or more days; or they performed any combination of walking, moderate intensity or vigorous intensity activities for 5 or more days per week attaining a minimum total physical activity of at least 600 MET minutes per week. Individuals who scored low level of physical activity on the IPAQ indicates that the criteria for either moderate or high levels of physical activity is not fulfilled (IPAQ scoring protocol, 2020).

Various validity and reliability testing was conducted in 12 countries during 2000. The test has shown high reliability with a Cronbach's  $\alpha$  of less than 0.80. The validity and reliability of this questionnaire were performed by Craig et al. (2003) and was recommended to be used for national and regional prevalence studies of participation in physical activity. The process of asking for permission from the author is eliminated due to no permission required and it is free and encouraged to be used for study, which stated in the official website of IPAQ-SF.

### **3.8 Procedure**

Online questionnaires are formulated by using Google Form. Besides that, Quick Response (QR) code is constructed for physical recruitment around UTAR Sungai Long and Kampar campus. After the questionnaire with consent form attached was ready for distribution, it is disseminated to students from different faculties who are available on social media by sharing its URL. The questionnaire is also shared to class representatives from different faculties through WhatsApp. In addition, participants were randomly recruited around the campus by providing the QR code to be scanned.

The questionnaire has six pages. On the first page, the title of the study is shown, and the email address of the participant is obtained. Explanation on the aim of the study was provided and each participant were informed to sign the consent form ("I agree/ I disagree") before they proceed to respond to the questionnaires. After informed consent was obtained, respondents are directed

to the next page. If consent is not obtained, the form was submitted, and participants will not be directed to the questionnaire. On the second page, the eligibility criteria are shown. If the participant has met the inclusion criteria, the participant will be directed to the next page. If the inclusion criteria are not met, the response will be terminated. On the third page, the Personal Data Protection form is shown, and electronic signature of the participant is requested. Participants who have agreed to the statement will proceed to the questionnaire while participants who did not agree to the statement will proceed to submit the form.

The questionnaire consists of 3 parts. Part A is the socio-demographic information where participants were asked to fill in their name, email address, age, gender, ethnicity, height, weight, faculty and course of study. In Part B, participants were asked six questions from BSMAS to assess at-risk social media addiction on the Internet and experience of using social media in the last seven days. In Part C, participants were asked seven questions from IPAQ - SF to evaluate their physical activity level over the past seven days. Lastly, participants will be thanked for their participation in this survey at the end of the questionnaire before submitting their answers.

A total of 381 responses were obtained and 378 responses were used for final analysis. 3 responses were discarded due to participant's inclusion criteria was not met. No incentives were given to the participants upon completion. Data collected are then tabulated using Microsoft Excel and analysed using SPSS.



### **3.9 Statistical Analysis**

Data collection, data cleaning and data coding was performed using Microsoft Excel. Statistical analysis was performed using Statistical Package for the Social Sciences (SPSS) software version 26.0. Descriptive analysis used in analysing the demographic data, social media addiction level and physical activity level. Categorical data was presented using percentage analysis and frequency distribution whereas continuous data was measured with mean and standard deviation. Chi Square's Test of Independence is used to test the association between social media addiction and physical activity. Level of significance was set at  $p=0.05$ .

### **3.10 Ethical Approval**

This study was subjected to the ethical approval from the Scientific and Ethical Review Committee (SERC) of Universiti Tunku Abdul Rahman. Participants were explained with the purpose of the study before responding to the questionnaire. They were informed that the participation in the study was fully voluntary. Therefore, withdrawal is allowed at any time throughout the questionnaire completion if they found the content of questionnaire were sensitive to them. Informed Consent will be obtained from all participants upon recruitment. Harmful effects and benefits and data confidentiality will be well-informed to the participants upon receiving the consent form.

### **3.11 STROBE Statement**

The study follows the requirement listed from the STROBE 2007 checklist for conducting cross-sectional study.

## **CHAPTER 4**

### **RESULTS**

After four weeks of participants' recruitment for filling in the questionnaire titled "THE IMPACT OF SOCIAL MEDIA ADDICTION ON PHYSICAL ACTIVITY AMONG UNDERGRADUATE STUDENTS", a total of 381 sets of online questionnaires were collected from students who pursuing any full-time bachelor honours degree programmes from Year 1 to Year 5 at UTAR Kampar and Sungai Long Campus. 378 responses were selected for data analysis after filtered. The overall response rate of this research study was 99.2% in result of 3 responses are not applicable due to participant's inclusion criteria was not met.

#### **4.1 Sample Characteristics of respondents**

This section provided the data of the demographic characteristics of the respondents in this study, including age, gender, ethnicity, faculty, height, weight, score in BSMAS and physical activity level. Table 4.1.1 depicts the sample characteristics of the respondents.

**Table 4.1.1** Sample characteristics of the study participants

<b>Variables</b>	<b>Frequency (%)</b>	<b>Mean (SD)</b>
<b>Age group</b>		
18-21	248 (65.6)	
22-25	126 (33.3)	
26-28	4 (1.1)	
<b>Gender</b>		
Male	160 (42.3)	
Female	218 (57.7)	
<b>Ethnicity</b>		
Malay	2 (0.5)	
Chinese	363 (96.0)	
Indian	12 (3.2)	
Others	1 (0.3)	
<b>Faculty</b>		
MK FMHS	117 (31.0)	
LKC FES	89 (23.5)	
FAM	85 (22.5)	
FCI	26 (6.9)	
FEGT	3 (0.8)	
FICT	6 (1.6)	
FSc	20 (5.3)	
FBF	16 (4.2)	
FAS	14 (3.7)	
ICS	2 (0.5)	
<b>Height</b>		2.05 (7.89)
<b>Weight</b>		58.26 (13.14)

The total number of respondents who completed the questionnaire without any missing information were 378. Regarding the age of the respondents, 248 (65.6%) of them were in the age group of 18 to 21 years old; 126 (33.3%) of them were in the age group of 22 to 25 years old; and 4 (1.1%) of them were in the age group of 26 to 28 years old. Over half of the study participants are

female (n = 218, 57.7%) when compared to male (n = 160, 42.3%). Most of the respondents were Chinese (n = 363, 96.0%) which then followed by Indian (n = 12, 3.2%), Malay (n = 2, 0.5%) and lastly by others (n = 1, 0.3%).

In terms of faculty, majority of the response came from MK FMHS students (n = 117, 31.0%), followed by LKC FES students (n = 89, 23.5%), FAM students (n = 85, 22.5%), FCI students (n = 26, 6.9%), FSc students (n = 20, 5.3%), FBF students (n = 16, 4.2%), FAS students (n = 14, 3.7%), FICT students (n = 6, 1.6%), FEGT students (n = 3, 0.8%), and ICS students (n = 2, 0.5%). The average height of the respondents was 2.05m. Furthermore, the average weight of the respondents was 58.26kg.

#### 4.2 Social Media Addiction Level

**Table 4.2.1** Items of Bergen Social Media Addiction Scale

<b>Abbreviation</b>	<b>Items</b>
BSMAS 1	You spend a lot of time thinking about social media or planning how to use it.
BSMAS 2	You feel an urge to use social media more and more.
BSMAS 3	You use social media in order to forget about personal problems.
BSMAS 4	You have tried to cut down on the use of social media without success.
BSMAS 5	You become restless or troubled if you are prohibited from using social media.
BSMAS 6	You use social media so much that it has had a negative impact on your job/ studies.

**Table 4.2.2** Assessment of social media addiction using BSMAS

Items	Frequency (%)				
	VO (5)	O (4)	S (3)	R (2)	VR (1)
BSMAS 1	31 (8.2)	80 (21.1)	109 (28.8)	88 (23.3)	70 (18.5)
BSMAS 2	27 (7.1)	115 (30.4)	125 (33.1)	73 (19.3)	38 (10.1)
BSMAS 3	35 (9.3)	98 (25.9)	83 (22.0)	94 (24.9)	68 (18.0)
BSMAS 4	29 (7.7)	80 (21.2)	113 (29.9)	102 (27.0)	54 (14.3)
BSMAS 5	22 (5.8)	55 (14.6)	94 (24.9)	125 (33.1)	82 (21.7)
BSMAS 6	23 (6.1)	73 (19.3)	104 (27.5)	99 (26.2)	79 (20.9)

Note: VO = very often; O = often; S = sometimes; R = rarely; VR = very rarely

Table 4.2.1 listed out all of the items that being tested in the Bergen Social Media Addiction Scale (BSMAS) questionnaire regarding the social media addiction level. Table 4.2.2 illustrated the correct response rate among the respondents for each particular item in the BSMAS.

98 (25.9%) respondents reported that they used social media often in order to forget about personal problems in the past seven days. In addition, 109 (28.8%) respondents reported that they sometimes spent a lot of time thinking about social media or planning how to use it besides 125 (33.1%) of them had feeling an urge to use social media more and more at sometimes in the past week. Apart from that, 113 (29.9%) respondents also reported that they sometimes have tried to cut down on the use of social media but failed to do so and sometimes they use social media so much that it has had a negative impact on their job or

studies (n = 104, 27.5%) in the past seven days. Finally, 125 (33.1%) respondents reported that they rarely became restless or troubled if they are prohibited from using social media in the past week. Only a minority of respondents reported that they very often became restless or troubled if they are prohibited from using social media (n = 22, 5.8%) in the past week.

**Table 4.2.3** Social media addiction levels using BSMAS

<b>Variables</b>	<b>Frequency (%)</b>	<b>Mean (SD)</b>
<b>Social Media Addiction</b>		
Yes	353 (93.4)	
No	25 (6.6)	
<b>Score in BSMAS</b>		16.6 (4.94)

Table 4.2.3 shows the social media addiction levels using BSMAS. Majority of the respondents (n = 353, 93.4%) were observed to be behaving from social media addiction, as evaluated using BSMAS with a clinical cut off score of more than 24 for positive results. On the other hand, 25 (6.6%) respondents were found to have no social media addiction. On average, the participants have a low quality of life ( $M = 16.6$ ,  $SD = 4.94$ ), as a score of 100 percentage means best possible quality of life and 0 represents the worst quality of life.

### 4.3 Physical Activity Level

The physical activity level of respondents was investigated and evaluated through IPAQ-Short Form with 7 items in this study. The data collected from respondents were calculated into MET-minutes per week which representing the total physical activity level in past seven days. The classification of participants' physical activity level was done according to the criteria given by IPAQ scoring protocol (2020). The calculation was done by IPAQ calculator developed by Cheng (2016).

**Table 4.3.1** Assessment of physical activity using IPAQ-SF

<b>Variables</b>	<b>Mean (MET- min/week)</b>	<b>SD (MET- min/week)</b>	<b>Median (hours)</b>	<b>IQR (hours)</b>
Walking	1065.47	1256.99		
Moderate intensity activities	431.06	705.91		
Vigorous intensity activities	676.95	1115.79		
Total MET-Minutes/Week	2173.54	2045.39		
Sitting			7.00	5.00

Note: SD = Standard deviation; IQR = Interquartile range



**Table 4.3.2** Classification of physical activity levels using IPAQ-SF

<b>Variables</b>	<b>Frequency (%)</b>	<b>Mean (SD)</b>
<b>Physical Activity Level</b>		
Low	100 (26.5)	
Moderate	161 (42.6)	
High	117 (31.0)	

Table 4.3.1 displays the assessment of physical activity of the study respondents using IPAQ-Short Form. Physical activity is recorded in total MET-minutes per week and is measured using three different domains, namely “Walking”, “Moderate intensity activities” and “Vigorous intensity activities”. The results illustrate that participants spent more time on walking ( $M = 1065.47$ ,  $SD = 1256.99$ ) on average, when compared to moderate intensity activities ( $M = 250.25$ ,  $SD = 705.91$ ) and vigorous intensity activities ( $M = 676.95$ ,  $SD = 1115.79$ ) in the past seven days. Additionally, the results indicate that participants on average performs an adequate amount of physical activity per week ( $M = 2173.54$ ,  $SD = 2045.39$ ) to meet the minimal physical activity guidelines. Median of time spent on sitting is 7.00 hours and interquartile range is 5.00 hours.

Table 4.3.2 shows the classification of physical activity levels based on the criteria stated in IPAQ- Short Form. Majority of the participants ( $n = 161$ , 42.6%) reported moderate physical activity levels, secondly by high levels of physical activity reported by 117 (31.0%) UTAR students and lastly 100 (26.5%) participants reported low levels of physical activity per week.

#### 4.4 Association between Social Media Addiction and Physical Activity Level

Pearson Chi-Square Test was performed to investigate the association between social media addiction and physical activity levels as both of the variables are categorical variables.

**Table 4.4.1** Pearson Chi-Square Test for social media addiction and physical activity level

	$\chi^2$	df	p-value
Social media addiction	1.532	2	0.465
Physical activity level	1.532	2	0.465

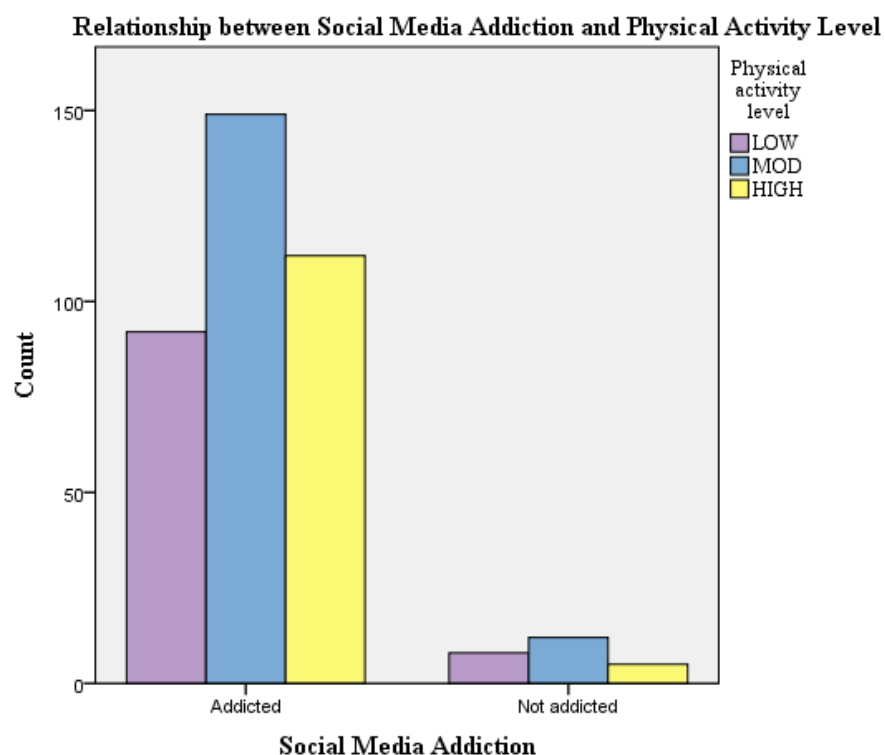
Note:  $\chi^2$  = Pearson Chi-Square value; df = degree of freedom, level of significant at  $p < 0.05$

Table 4.4.1 shows the result of Pearson Chi-Square Test on association between social media addiction and physical activity levels. Social media addiction and physical activity levels were the indicator of outcomes for both variables above respectively. As indicated in table 4.4.1, the result was  $\chi^2$  value = 1.532 and p-value = 0.465. Since p-value was greater than 0.05, which indicating that the null hypothesis was failed to reject, and alternative hypothesis was accepted. In short, there is no significant association between social media addiction and physical activity levels among undergraduate students in UTAR.

**Table 4.4.2** Crosstabulation table for social media addiction and physical activity levels

			Physical activity level			Total
			HIGH	MOD	LOW	
SMA	Addicted	Count	112	149	92	353
		% within social media addiction	31.7%	42.2%	26.1%	100.0%
	Not addicted	Count	5	12	8	25
		% within social media addiction	20.0%	48.0%	32.0%	100.0%
Total		Count	117	161	100	378
		% within social media addiction	31.0%	42.6%	26.5%	100.0%

Note: SMA = social media addiction; MOD = moderate



**Figure 4.4.1** Relationship between social media addiction and physical activity level among UTAR undergraduate students

Table 4.4.2 illustrates the crosstabulation table for social media addiction and physical activity levels. Figure 4.4.1 shows the relationship between social media addiction and physical activity level among UTAR undergraduate students. Based on Table 4.4.2, it was observed that moderately active individuals (n = 149, 42.2%) are more addicted to social media than their highly active (n = 112, 31.7%) and sedentary (n = 92, 26.1%) counterparts. On the other hand, 48.0% (n = 12) of moderately active individuals reported not being addicted to social media. Similarly, it was the highest among those who were not addicted to social media. Moreover, 32.0% (n = 8) of sedentary individuals reported not being addicted to social media. Finally, minority of the highly active participants were reported not being addicted to social media (n = 5, 20.0%).

## CHAPTER 5

### DISCUSSION

#### 5.1 Overview of the study discussion

The current study results indicate that there is no significant association between social media addiction and physical activity levels among undergraduate students in UTAR ( $p$ -value = 0.465). Over half of the study participants are female ( $n = 218$ , 57.7%) when compared to male ( $n = 160$ , 42.3%). This might be explained by the uneven proportion of male and female students across the ten different faculties. Besides, previous literature also suggested that it was difficult to recruit male participants in health behaviour research, particularly in physical activity interventions where women make up most of the participation (Ryan et al., 2019). Majority of the participants ( $n = 248$ , 65.6%) are in the age group of 18 to 21 years old. Additionally, majority of the participants are Chinese ( $n = 363$ , 96.0%) which then followed by Indian ( $n = 12$ , 3.2%), Malay ( $n = 2$ , 0.5%) and finally by others ( $n = 1$ , 0.3%). Most of the responses came from MK FMHS students ( $n = 117$ , 31.0%), followed by LKC FES students ( $n = 89$ , 23.5%), FAM students ( $n = 85$ , 22.5%), FCI students ( $n = 26$ , 6.9%), FSc students ( $n = 20$ , 5.3%), FBF students ( $n = 16$ , 4.2%), FAS students ( $n = 14$ , 3.7%), FICT students ( $n = 6$ , 1.6%), FEGT students ( $n = 3$ , 0.8%), and ICS students ( $n = 2$ , 0.5%). This finding reflects the difficulty in recruiting participants from other faculties. This might be due to FMHS students

are generally more likely to be involved in voluntary research when compared to non-health science students (Bovijn et al., 2017).

## **5.2 Social Media Addiction Level**

Based on the study results, an astonishing 93.4% of the participants are suffering from social media addiction. On the contrary, only 6.6% of the participants are not addicted to social media. On average, the results also indicate the participants appear to have a low quality of life ( $M = 16.6$ ,  $SD = 4.94$ ). This situation in fact indicates that the study participants were not aware regarding social media addiction and its impact towards an individual. The steady growth in Internet and social media addiction among adolescents can be clearly observed in recent studies which is in line with current study (Fernandes et al., 2020; Kashif & Aziz-Ur-Rehman, 2020; Orben et al., 2020; Scott et al., 2019). Furthermore, a study conducted among students studying in Pre-University colleges of Urban Bengaluru where the prevalence of social media addiction was observed in over one third of the participants (36.9%) which is almost equally distributed among Private and Government Pre-University colleges (Ramesh Masthi, Pruthvi & Phaneendra, 2018). The findings indicated that the prevalence of mild addiction was high among social media users from Pre-University colleges of Urban Bengaluru.

This finding is concerning as continuous use of Internet can cause disturbance in healthier daily routine since it consumes time that otherwise can be allocated for studying, exercising and other leisure activities (Pedrosa et al.,

2020). To emphasize on this point, a study shown that the participants spent an average of 55.8 minutes or 0.93 hours on social media every day (Riehm et al., 2020). The time spent on social media per day increased from an average of 50.4 minutes on the first day of the commencement of the study to 76.2 minutes on the last day of the study (Riehm et al., 2020). A case study conducted by Nazir et al. (2020) found that Malaysian were addicted to social media as a result of lack of self-discipline, easy access to the Internet, influential peers, and economic market conditions, hence resulting to a domino effect, which affect an individual's physical health, social intercourse, education and job opportunity. Furthermore, Yahya et al. (2018) indicated that adolescents in Klang Valley, Malaysia experienced social networking sites habits and addiction behaviours based on the findings as majority of the participants use it for more than two hours per day.

High prevalence of social media addiction among UTAR undergraduate students could be explained by several reasons. One of the factors contributing to the increase time spent on social media may be due to social isolation during the COVID-19 pandemic where social media platforms had become the only online communication tools that allow them to interact with friends and maintain their social life. This assumption is proved in a study conducted by Fernandes et al. (2020) among young adults in Great Britain, India, Malaysia, and Mexico, where the results shown significant increase in time spent on social media usage, video games playing and online video content watching during the COVID-19 pandemic. In another study by Kashif & Aziz-Ur-Rehman (2020), it is observed that the participants spent their leisure time on social media more often (67.0%)

during the COVID-19 pandemic as compared to before the pandemic. This finding is in line with studies by Ni et al. (2020) and Smith et al. (2020) which stated that strict social distancing orders may result in increased time spent on social media to search for COVID-19 related news. Additionally, individuals during confinement spent a lot of their time browsing or sharing social network contents (Rodriguez-Rey et al., 2020). Not only that, Lemenager et al. (2021) also found that the time spent on using social media increased obviously (71.4%) during the COVID-19 pandemic.

However, in comparison to a recent study conducted among university students in Cambodia, the level of social media addiction is reported not that serious with 59.4% of participants were detected slight addiction and only 28.6% were moderately addicted (Kreya & Wok, 2020). In addition, a study conducted on high school students in Turkey also observed that the respondents' mean social addiction score ( $16.59 \pm 6.79$ ) were below average (Sümen & Evgin, 2021). The results shown that 49.3% of the students had been using social media for about one to three years, besides that 53.9% of them spent one to three hours daily on social media and 35.9% checked their social media whenever there is a notification (Sümen & Evgin, 2021). Accordingly, these findings from previous studies do not support with the current study where a high prevalence of social media addiction among UTAR undergraduate students is indicated.



### **5.3 Physical Activity Level**

According to the current study findings, majority of the participants reported having moderate physical activity levels (42.6%), followed by high physical activity levels (31.0%), whereas only 26.5% of participants reported having low physical activity levels. This might indicate that the participants have knowledge and awareness concerning to the importance of being physically active as highlighted in WHO and many evidence based research. A study conducted among university students from Faculty of Medicine in Turkey noted that 30% of the participants were physically active during their university education (Dayi et al., 2017). Additionally, most of the participants (98.7%) reported that they knew the advantages of doing physical activity, 93.9% believe it helps to reduce stress and 94.5% believe it controls body weight. Possible reason for this observation could also be that the health sciences students had more knowledge about the benefits of physical activity in comparison with other non-health science students (Dayi et al., 2017).

Secondly, sports facilities such as gymnasium, golf club, swimming pool, futsal, volleyball and badminton court are easily accessible around UTAR Sungai Long and Kampar campus, which encourage participation of students in different sports, hence enhancing the physical activity level in the population. To emphasize in this point, a study conducted by Lee et al. (2016) found that respondents with easy access to sports facilities engaged in physical activity more regularly compared to respondents without easy access. Moreover, half of the participants reported that they involved in physical activity by utilizing the

sports facilities provided in campus (Dayi et al., 2017). Thereupon, accessibility of sports facilities should be highly considered to create an environment beneficial to physical activity thus improving physical activity level in a population (Lee et al., 2016).

The current findings are supported by several studies conducted in different countries such as in Brazil, Malaysia and Poland which found that about 40% of the participants were involved in physical activity (Al-Naggar, Bobryshev & Mohd Noor, 2013; Likus et al., 2013; Martins et al., 2010). A research done by El-Gilany et al. (2011) among university students in Egypt determined that more than half of the participants (52.0%) involved in moderate physical activity levels while 36.7% were involved in high physical activity levels. Not only that, a study conducted on adolescents in Jordan stated that 48.5% of the participants were physically active, which is consistent with the current study (Haddad, Owies & Mansour, 2009).

Even though some studies have proven that young adults were physically active by engaging in regular moderate- and vigorous- intensity exercises, yet there was still a plenty of research showing that most of the young adults were physically inactive. For instance, a study carried out on high school students in United States indicated that 75.3% of the respondents were reported physically inactive, below recommended level based on the dietary guidelines suggested by United States Department of Health and Human Services (Hortz et al., 2009). Moreover, high rates of sedentary behaviour were reported, putting them at risk

for health consequence associated with inactivity (Hortz et al., 2009). Hence, more studies regarding the level of physical activity among different population in different settings should be done in order to confirm the consistency of these findings from previous studies.

Furthermore, the results indicate that the participants spent more time on walking ( $M = 1065.47$ ,  $SD = 1256.99$ ) on average, when compared to moderate intensity activities ( $M = 431.06$ ,  $SD = 705.91$ ) and vigorous intensity activities ( $M = 676.95$ ,  $SD = 1115.79$ ). This finding is in line with a study which stated that walking was an activity that was commonly reported both in active (19.7%) and inactive groups (57%) (Lesser & Nienhuis, 2020). The current results also show that participants on average performs an adequate amount of physical activity per week ( $M = 2173.54$ ,  $SD = 2045.39$ ). Median of time spent on sitting is 7.00 hours and interquartile range is 5.00 hours. Excessive sedentary behaviour results in a variety of negative impacts to an individual for instance increased risk of developing cardiovascular disease and type 2 diabetes (Grimaldi-Puyana et al., 2020). Besides that, time spent on sitting was also positively associated with greater smartphone use in college students (Grimaldi-Puyana et al., 2020). Hence, effective approaches should be implemented in order to encourage sedentary students to incorporate physical activity into their daily routine so as to meet the minimal physical activity guidelines suggested by WHO. They should also be informed of effective ways to limit the amount of time spent on sitting, especially during periods of e-learning. For example, a study conducted on young adults in Thailand noted that dynamic sitting exercises during prolonged sitting can avoid the decreased of lumbar range of

movement in both lumbar flexion and extension after two hours of sitting period (Chatchawan et al., 2015).

#### **5.4 Association between social media addiction and physical activity level**

There is no significant association between social media addiction and physical activity level among undergraduate students in UTAR ( $p = 0.465$ ). Based on the current study, students who are physically active are more likely to report increased physical activity with increased prolonged use of social media and vice versa for physically inactive students. This may be due to the fact that physically active students who use social media very often are more exposed to physical activity-related news or pictures (Shimoga, Erlyana & Rebello, 2019). It was observed that the number of moderately active participants increases exponentially as increased use of social media, leading to social media addiction. However, this observation is also true for individuals who are sedentary and highly active on a lesser degree. It was observed that moderately active individuals (42.2%) are more addicted to social media than their highly active (42.2%) and sedentary (26.1%) counterparts. On the other hand, 48.0% of moderately active participants reported appropriate use of social media and not suffering from social media addiction, highest proportion among non-addicted social media users. The current findings indicate that the presence or absence of social media addiction does not cause impact on the physical activity level among UTAR undergraduate students.

The current study findings were supported by some of the previous literatures. For example, previous study shown that there was no significant association between physical activity levels and social media addiction levels among physiotherapy and rehabilitation students who receive online education during the Covid-19 pandemic (Hürer et al., 2021). Besides that, previous literature also stated that the participation in physical activity and social media addiction among university students in Turkey was not significantly differ in terms of their gender (Erbaş & Gümüş, 2020). Nevertheless, this study result is contrary to most of the previous studies. For instance, a study conducted by Shimoga, Erlyana & Rebello (2019) among middle and high school students noted that there was a statistically significant relationship between frequency of social media use and physical activity. Not only that, but previous literature also stated positive impacts of physical activity on mental health by the decrease of tendencies of addictive social media use (Precht et al., 2022).

The lack of significant association between social media addiction and physical activity level ( $p = 0.465$ ) might be explained by several reasons. Firstly, the students might have knowledge and awareness regarding the importance of performing physical activity frequently since approximately one third of the participants were came from Faculty of Medicine and Health Science (31.0%). Hence, the students have basic understanding and information about the benefits of being physically active at the same time applying this practice in their real life. This can be clearly seen in a study conducted among physiotherapy and rehabilitation students in Turkey indicated that the participants were moderately active (67.8%) as they are conscious of the importance of physical activity, thus

they can apply the knowledge about physical activity strategies and establish an environment for regular exercise at home (Hürer et al., 2021). The previous literature concluded that there was no significant association of social media addiction levels with physical activity levels which is in line with the current study.

Secondly, social media platforms provide versatility of information gathering and exchange related to physical activity. An individual can easily obtain guidance, advice and educational materials related to physical activity from the sharing of their friends, followers and bloggers through social media platforms. The information can be delivered in the form of pictures, messages, videos, short films, posts, tweets, live streams, personalised content, an electronic journal and newsletter. This is in line with a recent systemic review which stated that social media interventions elicit positive effect on physical activity through increase in physical activity levels among young people and adults (Goodyear et al., 2021).

Besides that, one can also receive social support and online psychological counselling through social media as motivation levels play a critical part in sedentary behaviours among inactive population (Lesser & Nienhuis, 2020). Previous literature stated that inactive participants who maintained or became more active reported a higher likelihood to exercise with a partner, suggesting that social support is more important for inactive people (Lesser & Nienhuis, 2020). Lastly, social media may provide motivation and

encouragement to an individual to change his or her physical activity habits via gamification principles, for examples sports tournament and social media challenge related to physical activity with rewards given (Goodyear et al., 2021). Accordingly, when the versatility of social media is used appropriately, physical activity levels of the population will also increase naturally.

### **5.5 Limitations of study**

It is important to note that this study is unable to identify the direction of association between the variables due to the nature of the study design. It is not known whether frequent social media use can cause low physical activity levels, or vice versa. This study has its own limitations which must be kept in mind during interpretation of the results. First of all, due to the nature of the study, there was no reliable method to measure the physical activity levels of participants objectively. Participants were asked to self-report their physical activity level using IPAQ Short Form and thus may have introduced reporting bias into the study.

Secondly, convenient sampling method was used in this study which was a method of collecting the sample from ways that were accessible to the researcher. Hence, self-selection bias and sample bias might be happened due to over-represented or under-represented of certain groups. Besides, the current study was focusing among the undergraduate students from the Universiti Tunku Abdul Rahman (UTAR) which the findings might not applicable or generalize to other population in the community.

Thirdly, representation of Malaysia population was another limitation in this current study as majority of the respondents were Chinese which followed by Indians, Malays and others. However, Malays form the largest community in Malaysia which in this case indicates the result was not generalizable to the public.

## **5.6 Recommendations**

In the light of the limitations mentioned above, some recommendations can be outlined for further research purpose.

First and foremost, future research programs exploring barriers to participation and perceptions of physical activity among young adults are recommended. This is to find out the actual reasons or factors that stop them from being physically active thus lowering the level of physical activity in the target population, particularly university students. Once the factors behind low levels of physical activity are understood, relevant units such as health organizations and health care professionals can design programs or forum in order to encourage active lifestyle in the community.

In addition, the types of social media content that participants browsed, and time spent on social media should be measured and included in the study questionnaire. This is due to it is important to understand that how social media use may discern from social media addiction in relation to physical activity.



Accordingly, methods on reducing the proportion of social media addiction in the community can be done based on the findings found.

Last but not least, instead of purely focusing among the undergraduate students in UTAR, more studies regarding the association between social media addiction and physical activity levels should be carried out in our community to identify the gaps of study and review for better health programs among nations. Hence, further studies with larger sample size of different population in different settings were encouraged as the validation of findings for the study besides to resolve the inequality of students from different ethnicities.

## **CHAPTER 6**

### **CONCLUSION**

In conclusion, the aim of this study is to find out the impact of social media addiction on physical activity among undergraduate students in UTAR. The results show that there are no significant associations between social media addiction and physical activity among undergraduate students in UTAR. Moreover, it was found that a significant number of undergraduate students from UTAR are suffering from social media addiction. It raises the concern that appropriate countermeasures must be taken to reduce the temptation in social media usage on these students. Besides, 42.6% of the participants reported moderate physical activity levels, yet 26.5% of the participants reported low levels of physical activity, which did not meet the minimal physical activity guidelines recommended by WHO. Accordingly, steps must be taken to raise awareness on the importance of physical activity and risks of being sedentary among the students. Physical activity not only acts as a significant role in maintaining physical health, it also plays a pivotal part in improving mental well-being during catastrophic events such as the COVID-19 pandemic.

Appropriate social media use provides information that are easily understandable such as sports knowledge and public health education which helps to increase the physical activity levels among the masses. It was found that university students from Faculty of Medicine in Turkey who are well-equipped with physical activity knowledge are more physically active during their

university education compared to students who do not have the related knowledge from non-health science faculty (Dayi et al., 2017). University students should maintain a healthy lifestyle, particularly by engaging in home-based physical activity while using their social media appropriately. Telehealth or public broadcasting of home-based physical activity promotions could be implemented to advocate active lifestyle and mental healthcare (Meyer et al., 2020). Besides, it is also imperative to get enough sleep, eat healthily, exercise and meditate regularly (Hiremath et al., 2020 as cited by Rogowska et al., 2020b).

To summarize, from the current study findings, physiotherapists able to plan for further programmes such as education, awareness campaign, physical or online talks specifically on the social media addiction condition for the students. When the students manage to raise their awareness on importance of physical activity and exercise, the involvement in physical activity by the target population increased, automatically the physical activity level of the population will also be improved.

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# APPENDICES

## APPENDIX A

### ETHICAL APPROVAL LETTER (NO. 32)



**UNIVERSITI TUNKU ABDUL RAHMAN**  
Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

Re: U/SERC/224/2022

4 November 2022

Mr Muhammad Noh Zulfikri Bin Mohd Jamali  
Head, Department of Physiotherapy  
M. Kandiah Faculty of Medicine and Health Sciences  
Universiti Tunku Abdul Rahman  
Jalan Sungai Long  
Bandar Sungai Long  
43000 Kajang, Selangor

Dear Mr Muhammad Noh,

#### Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your students' research project from Bachelor of Physiotherapy (Honours) programme enrolled in course UMF3026. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Knowledge and Attitude Towards Overweight and Obesity Among Physiotherapy and Medical Students: A Cross-Sectional Study	Ching Yung Shan	Mr Muhammad Noh Zulfikri Bin Mohd Jamali	4 November 2022 – 3 November 2023
2.	Effects of Different Gluteal Strengthening Programs on Strength, Pain, Functional Disability and Balance Among University Students with Non-specific Chronic Low Back Pain: A Randomized Controlled Trial	Lee Kah Yi		
3.	Effects on Menstrual Cycle on Dynamic Balance and Muscle Strength Among Recreational Players	Ler Chai Hong		
4.	Knowledge and Awareness Towards Pneumonia Among UTAR Non-Health Sciences Undergraduate Students	Chooi Yan Yee	Pn Nurul Husna Binti Khairuddin	
5.	The Effect of Active Video Games on 6-Minute Walk Test in Overweight and Obese Children	Chin Jay Ven	Dr Deepak Thazhakkattu Vasu	
6.	Association of Functional Ability of Upper Extremity and Scoliosis Among College Students: A Correlational Study	Sammi Leong Sing Yee		
7.	A Correlation Study Between Achilles Tendon Contracture and Posterior Tibial Tendon Dysfunction on Ankle Instability Among Young Adults with Pes Planus	See Wan Ni		
8.	A Correlational Study of the Relationship Between Flat Foot with Anterior Pelvic Tilt and Sacroiliac Joint Dysfunction Among Undergraduate Students	Tan Bee Thong		
9.	Association Between Physical Activity, Learning Style and Academic Performance Among UTAR Health Science Undergraduates	Yeoh Zhe Yi	Ms Kamala a/p Krishnan	

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**Sungai Long Campus** : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia  
Tel: (603) 9086 0288 Fax: (603) 9019 8868  
Website: www.utar.edu.my



No	Research Title	Student's Name	Supervisor's Name	Approval Validity
31.	Association of Postural Awareness with Sedentary Behavior and Back Pain During the Hybrid Study Among Undergraduate Students	Low Xin Yuen	Mr Martin Ebenezer Chellappan	4 November 2022 – 3 November 2023
32.	Impact of Social Media Addiction on Physical Activity Among Undergraduate Students	Mak Kai Nan		
33.	Tibial Torsion and Leg Length Discrepancy in Idiopathic Scoliosis Among UTAR Students	Khoo Wan Qi	Pn Nadia Safirah Binti Rusli	
34.	Prevalence of Patellofemoral Pain Among University Students	Khoo Wen Han		
35.	Prevalence of Varicose Veins Among Fast Food Employees in Cheras, Selangor: A Cross Sectional Study	Ropheca Phuah Su Hui		
36.	The Effect of Unstable Modified Wall Squat on Dynamic Balance Among Recreational Athletes	Chu Sin Jiet	Mr Sathish Kumar Sadagobane	
37.	Knowledge, Perception, and Attitude Towards Breast Cancer and Breast Self-Examination (BSE) Among Non-medical Private University Students	Foo Jes Mynn		
38.	Perception, Knowledge and Attitude Towards the Impact of Daytime Nap on the Risk of Stroke Among Non-Healthcare Undergraduate Students: A Cross-Sectional Study	Chan Chi Kuan	Mr Tarun Amalnerkar  Co-Supervisor: Ms Swapneela Jacob	
39.	Awareness, Knowledge and Attitude Toward Orthostatic Hypotension Among Elderlies	Ch'ng Hui Kee		
40.	Effect of TikTok on Student Learning Among Physiotherapy Students	Tan Eng Jing	Mr Avanianban Chakkarapani	
41.	Awareness Towards Tourette Syndrome Among Health Science and Non-health Science Students in A Private University, Malaysia	Tan Kai Xuan		
42.	Effect of Scapular Retraction Exercise on Forward Head Posture Among University Students	Tay Kai Wei	Ms Mahadevi A/P Muthurethina Barathi	
43.	Comparison Between Effect of Lower Limb Cyclic Stretching and Ballistic Stretching on Jumping Distance Among Undergraduate Students: A Comparative Study	Ng Zi Ru		
44.	Relationship of Physical Activity with Anxiety and Depression Among University Students	Ong Aiwei		
45.	Gender Discrepancy and Its Association with Shoulder Pain Among Malaysian Recreational Badminton Players	Khoo Je-Yique	Pn Nur Aqiliriana Binti Zaimuddin	
46.	Obesity, Eating Habits and Physical Activity Before and During Covid-19 Pandemic Among University Lecturers	Khoo Tze Sean		

The conduct of this research is subject to the following:

- (1) The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

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**Tel:** (603) 9086 0288 **Fax:** (603) 9019 8868  
**Website:** www.utar.edu.my



Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,



**Professor Ts Dr Faiz bin Abd Rahman**  
Chairman  
UTAR Scientific and Ethical Review Committee

c.c Dean, M. Kandiah Faculty of Medicine and Health Sciences  
Director, Institute of Postgraduate Studies and Research

**Kampar Campus** : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia  
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**Website**: [www.utar.edu.my](http://www.utar.edu.my)





## **APPENDIX B**

### **PERSONAL DATA PROTECTION STATEMENT**

Please be informed that in accordance with Personal Data Protection Act 2010 (“PDPA”) which came into force on 15 November 2013, Universiti Tunku Abdul Rahman (“UTAR”) is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes:

- a) Name
- b) Identity card
- c) Place of Birth
- d) Address
- e) Education History
- f) Employment History
- g) Medical History
- h) Blood type
- i) Race
- j) Religion
- k) Photo
- l) Personal Information and Associated Research Data

2. The purposes for which your personal data may be used are inclusive but not limited to:

- a) For assessment of any application to UTAR
- b) For processing any benefits and services
- c) For communication purposes
- d) For advertorial and news
- e) For general administration and record purposes
- f) For enhancing the value of education
- g) For educational and related purposes consequential to UTAR
- h) For replying any responds to complaints and enquiries
- i) For the purpose of our corporate governance
- j) For the purposes of conducting research/ collaboration

3. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

4. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

5. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

7. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfil our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

8. You may access and update your personal data by writing to us at [kaiinan511@lutar.my](mailto:kaiinan511@lutar.my)

Acknowledgment of Notice

I have been notified and that I hereby understood, consented and agreed per UTAR above notice.

I disagree, my personal data will not be processed.

.....

Name:

Date:

## APPENDIX C

### INFORMATION SHEET AND CONSENT FORM

#### IMPACT OF SOCIAL MEDIA ADDICTION ON PHYSICAL ACTIVITY AMONG UNDERGRADUATE STUDENTS

You are invited to participate in a research study conducted by MAK KAI NAN, from Bachelor of Physiotherapy (Honours) Universiti Tunku Abdul Rahman (UTAR), Sungai Long Campus. The purpose of this research study is to investigate the impact of social media addiction on physical activity among undergraduate students in UTAR.

#### **Participation**

This research study requires you to complete this questionnaire. You will spend around 10 to 15 minutes to complete the questionnaires. Your participation in this study is completely voluntary. Withdrawal from this study is allowed at any time. The decision to withdraw will not influence your relationship with researcher.

#### **Confidentiality**

Your information and data will be kept in confidential. All associated data collected will be immediately destroyed wherever possible.

#### **Benefits**

There will be no benefits or incentives provided in this study.

If you have any enquiries about this research study, you may contact me, MAK KAI NAN at 010-2578918 through WhatsApp or send an email to kaiinan511@lutar.my. If you willing to participate in this study, please put your signature below, and return it to the researcher.

Signature:

\_\_\_\_\_

Name of Participant:

Date:

Signature:

\_\_\_\_\_

Name of Witness:

Date:

## APPENDIX D

### STUDY QUESTIONNAIRE (GOOGLE FORM)

# Impact of Social Media Addiction on Physical Activity Among Undergraduate Students

Dear respondents,

Good day! ✨ You are invited to participate in a research project conducted by MAK KAI NAN, a Year 3 Trimester 1 student, currently pursuing Bachelor of Physiotherapy (Hons) in [Universiti Tunku Abdul Rahman \(UTAR\)](#), Sungai Long Campus. The objective of this study is to investigate the impact of social media addiction on physical activity among undergraduate students in UTAR. To participate in this study, you must be a full time undergraduate students enrolled in any bachelor [honours](#) degree [programme](#) in UTAR Kampar Campus or Sungai Long Campus. You are encouraged to read all the descriptions of this study before participating.

#### Participation

You are required to complete the questionnaire given in this research study. Your participation in this study is completely voluntary. Withdrawal from this study is allowed at any time. This questionnaire comprised of 4 categories. Part A is the informed consent form, Part B is the demographic data of participants, Part C is the Bergen Social Media Addiction Scale (BSMAS) and Part D is the International Physical Activity Questionnaire-Short Form (IPAQ-SF). It will take approximately 10 minutes to complete the questionnaire.

#### Confidentiality

Your information and data will be kept confidential. All associated data collected will be immediately destroyed wherever possible.

Should you have any enquires about this research study, kindly contact me, MAK KAI NAN at 010-2578918 or [kainan511@1utar.my](mailto:kainan511@1utar.my).

UTAR Email Address

Short-answer text

Consent Form \*

- I have been notified by you and that I hereby understand, consent and agreed per UTAR above notice.
- I disagree, I do not consent to this study.

Eligibility Criteria



**Exclusion Criteria:**

1. Do not have any social media account.
2. Individuals with physical disabilities.
3. Individuals with medical disease which limits physical activity in past 3 years.
4. Currently taking any type of medication.

Do you meet any of the **exclusion criteria** listed above? \*

- No (You are qualified in this research and may proceed to the following questions.)
- Yes (Sorry, you are not qualified in this research. Thank you for your participation.)

Part A: Personal Data Protection Statement



Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

**Notice:**

1. The purposes for which your personal data may be used are inclusive but not limited to:-

- For assessment of any application to UTAR
- For processing any benefits and services
- For communication purposes
- For advertorial and news
- For general administration and record purposes
- For enhancing the value of education
- For educational and related purposes consequential to UTAR
- For the purpose of our corporate governance
- For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

**Consent:**

1. By submitting this form you hereby authorize and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.
2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.
3. You may access and update your personal data by writing to us at [kaiinan511@utar.my](mailto:kaiinan511@utar.my)

**PDPA Statement \***

- I have been notified by you and that I hereby understand, consent and agreed per UTAR above notice.
- I disagree, my personal data will not be processed.

**Electronic Signature \***

E.g.: *Mak Kai Nan*

Short-answer text

**Part B: Demographic Data**

Description (optional)

**Name**

Short-answer text

**Age \***

Short-answer text

**Gender \***

- Male
- Female

...

Ethnicity \*

- Malay
- Chinese
- Indian
- Other...

Height \*

(in m)

Short-answer text

---

Weight \*

(in kg)

Short-answer text

---

Faculty \*

- M. Kandiah Faculty of Medicine and Health Sciences (MK FMHS)
- Lee Kong Chian Faculty of Engineering and Science (LKC FES)
- Faculty of Accountancy and Management (FAM)
- Faculty of Creative Industries (FCI)
- Faculty of Engineering and Green Technology (FEGT)
- Faculty of Information and Communication Technology (FICT)
- Faculty of Science (FSc)
- Faculty of Business and Finance (FBF)
- Faculty of Arts and Social Science (FAS)
- Institute of Chinese Studies (ICS)
- Other...

Part C: Bergen Social Media Addiction Scale (BSMAS)



This part consists of 6 questions that will assess at-risk social media addiction on the Internet and experience of using social media over the **past 7 days**.

Below are the indicators for level of social media addiction:

- 1 - Very Rarely
- 2 - Rarely
- 3 - Sometimes
- 4 - Often
- 5 - Very Often

1. You spend a lot of time thinking about social media or planning how to use it. \*

	1	2	3	4	5	
Very Rarely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Often

2. You feel an urge to use social media more and more. \*

	1	2	3	4	5	
Very Rarely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Often

3. You use social media in order to forget about personal problems. \*

	1	2	3	4	5	
Very Rarely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Often

4. You have tried to cut down on the use of social media without success. \*

	1	2	3	4	5	
Very Rarely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Often



5. You become restless or troubled if you are prohibited from using social media. \*

	1	2	3	4	5	
Very Rarely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Often

6. You use social media so much that it has had a negative impact on your job/ studies. \*

	1	2	3	4	5	
Very Rarely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very Often

Part D: International Physical Activity Questionnaire - Short Form (IPAQ-SF)



We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives.

The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person.

1. During the **last 7 days**, on how many days did you do **vigorous** physical activities? \*

Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Eg: heavy lifting, digging, aerobics/ fast bicycling.

1. 0 (Skip to question 3)

2. 1

2. How much time did you usually spend doing vigorous physical activities on one of those days? \*

Answer 00:00 if no vigorous physical activity  
(in hour : min)

Short-answer text

3. During the **last 7 days**, on how many days did you do **moderate** physical activities? Do not include walking. \*

Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Eg: carrying light loads, bicycling at a regular pace/ doubles tennis.

1. 0 (Skip to question 5)

2. 1

3. 2

4. How much time did you usually spend doing **moderate** physical activities on one of those days? \*  
(in hour : min)

Short-answer text

5. During the **last 7 days**, on how many days did you **walk** for **at least 10 minutes** at a time?

This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise/ leisure.

1. 0 (Skip to question 7)

2. 1

3. 2

4. 3

5. 4

⋮

6. How much time did you usually spend **walking** on one of those days? \*  
(in hour : min)

Short-answer text

7. During the **last 7 days**, how much time did you spend **sitting** on a **week day**? \*

This may include time spent at work, home, while doing course work and during leisure time. Eg: sitting at a desk, visiting friends, reading, sitting/ lying down to watch television. Sleeping is excluded.

(in hour : min)

Short-answer text

This is the end of questionnaire, thank you for participating! ♥

Description (optional)

## APPENDIX E

### TURNITIN REPORT

Impact of social media addiction on physical activity among undergraduate students in UTAR.

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